

**AMENDMENTS TO THE DRAWINGS**

The attached sheet of drawings includes changes to Figure 4B. This sheet, which includes Figure 4B, replaces the original sheet including Figure 4B. In Figure 4B, typographical and numerical errors have been corrected.

Attachment: Replacement sheet

**REMARKS**

In the foregoing amendment, claims 1, 3-5, 8-13, 15-17, 20-25, 28, 31, 38, 41, 60 and 63 have been amended. Pending in the application are claims 1-96, of which claims 1, 13, 25, 38, 60, 73, 80 and 87 are independent. The following comments address all stated grounds for rejection, and the Applicant respectfully submits that the presently pending claims, as identified above, are now in a condition for allowance.

**I. Claim Amendments**

Applicant has amended claims 1 and 13 to be directed to a computer-implemented method. Applicant has also amended claims 1 and 13 to add the feature of “saving the model of the target system in a storage element.” Applicant has further amended claims 1 and 13 to clarify the scope of the claimed invention. For example, claims 1 and 13 has been amended to specify that “the icon becomes associated with and represents the first component model.” Claims 25, 38 and 60 have been amended to add “a storage element for saving the model of the target system.” Support for the claim amendments can be found in the figures and specification of the present application, for example, Figure 1B and corresponding descriptions. No new matter has been introduced.

Applicant has amended claims 3-5, 8-12, 15-17, 20-24, 28, 31, 41 and 63 to clarify the dependencies or languages of the claims. No new matter has been introduced.

**II. Summary of Objections and Rejections**

The drawings are objected to as including informalities.

Claims 1, 28, 31, 41, 63 and 95 are objected to as including informalities.

Claims 1-24 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

Claims 1-72 are rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter.

Claims 1, 2, 4-14, 16-24, 38-41, 54-72 and 80-96 are rejected under 35 U.S.C. §102(a) as being anticipated by AeroSim Blockset User's Guide ("AeroSim").

Claims 3, 15, 25-37, 42-53 and 73-79 are rejected under 35 U.S.C. §103(a) as being unpatentable over AeroSim in view of "FDC 1.2 – A SIMULINK Toolbox for Flight Dynamics and Control Analysis."

These objections and rejections will be discussed separately below.

### **III. Drawings**

The drawings are objected to as including informalities. (See office action, page 2).

With respect to the objections to Figure 4B, Figure 4B has been amended to correct the term "turdulence" to "turbulence." Figure 4B has also been amended to use reference character "421" to designate a button, as noted in the specification.

With respect to the objections to Figure 2D, Applicant has amended the specification to include reference character "240."

With respect to the objections to Figure 4E, Applicant has amended the specification to change reference character "440" to "450."

In view of the foregoing amendments to the drawings and specification, Applicant respectfully requests withdrawal of the objections to the drawings.

### **IV. Claim Objections**

Claims 1, 28, 31, 41, 63 and 95 are objected to as including informalities. (See office action, page 3).

Claim 1 has been amended to remove the word "models" in line 2.

Claims 28, 41 and 63 have been amended to remove the term “underlying” in line 1.

Claim 31 has been amended to define the acronym “COESA”.

With respect to the objection to claim 95, the Office Action states that the claim should be amended to change “an equations of motion” to “an equation of motion.” Examiner appears to read the claim as reciting multiple equations of motion. The claim, however, recites “an equations of motion model.” The terms “an” and “equations of motion” modify the word “model,” respectively.

In view of the foregoing claim amendment and arguments, Applicant respectfully requests withdrawal of the objections to the claims.

**V. Claim Rejections under 35 U.S.C. §112**

Claims 1-24 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. (See office action, page 4)

Claims 1 and 13 have been amended to recite “a computer-implemented method.”

Claim 8 has been amended to depend on claim 2 to provide antecedent basis for the second component model.

In view of the foregoing amendment, Applicant respectfully requests withdrawal of the rejection of claims 1-24 under 35 U.S.C. §112, second paragraph.

**VI. Claim Rejections under 35 U.S.C. §101**

Claims 1-72 are rejected under 35 U.S.C. §101 as being directed non-statutory subject matter. (See office action, page 4). Applicant respectfully traverses the rejection.

**A. Claims 1, 13, 25, 38, and 60**

The Office Action states that claims 1, 13, 25, 38 and 60 do not produce a useful, concrete and tangible result. (See office action, page 4, paragraph 22).

Applicant submits that these claims produce a useful, concrete and tangible result. Claims 1 and 13 have been amended to include the limitation of “saving the model of the target system in a storage element.” Claims 25, 38 and 60 include “a storage element for saving the model of the target system.” Applicant submits that the model of the target system saved in a storage element is a tangible and concrete result.

Applicant also submits that the computer simulation model of a target system is useful for an engineer or system designer to determine the characteristic of the target system before physically implementing the target system. In particular, the claimed invention enables a user to build or change a model easily. With the claimed invention, a user can conveniently change a currently incorporated component model to another component model without replacing the incorporated component model with another component model.

In view of this, Applicant respectfully submits that claims 1, 13, 25, 38 and 60 are directed to statutory subject matter. Applicant therefore requests withdrawal of the rejection of claims 1, 13, 25, 38 and 60.

**B. Claims 25, 38 and 60**

The office action states that “claims 25, 38 and 60 recite software limitations and therefore the claims are directed to software per se, which are considered non-statutory subject matter.” (See office action, page 5). Applicant respectfully disagrees.

Claims 25, 38 and 60 recite a computer implemented system for designing a target system. The claims include elements, such as a model storage and a design unit, which are implemented in a computer system. The elements of the claims are not software per se. Rather, the elements are implemented as a portion of a computer system that is a combination of hardware and software.

Applicant therefore submits that claims 25, 38 and 60 are directed to statutory subject matter. As such, Applicant respectfully requests withdrawal of the rejection of claims 25, 38 and 60 under 35 U.S.C. §101.

## **VII. Claim Rejections under 35 U.S.C. §102**

Claims 1, 2, 4-14, 16-24, 38-41, 54-72 and 80-96 are rejected under 35 U.S.C. §102(a) as being anticipated by AeroSim Blockset User's Guide ("AeroSim") from Unmanned Dynamics, LLC. (See office action, page 5). Applicant respectfully traverses the rejection.

The rejections will be discussed below in the order of independent claims 1, 13, 25, 38, 60, 72, 80 and 87 and their dependent claims.

### **A. Independent Claims 1 and 13**

Applicant respectfully submits that AeroSim fails to disclose at least the following limitation of claim 1: "selecting a first component model provided in the user interface so that the icon becomes associated with and represents the first component model, wherein the first component model is incorporated into the model of the target system through the icon." Similarly, Applicant also respectfully submits that AeroSim fails to disclose the limitation of claim 13 of "selecting a first component model provided in the user interface so that the icon becomes associated with and represents the first component model after a sequence of modifications to the model, wherein the component model is incorporated into the model of the target system through the icon."

The Examiner alleges that AeroSim discloses this feature at page 41, 2<sup>nd</sup> paragraph. Applicant respectfully disagrees.

AeroSim discloses at page 41, 2<sup>nd</sup> paragraph that:

The main library folder, shown in Fig. 31 includes sub-folders for various parts of the aircraft dynamic model. The sub-sections of the **Block Reference** section correspond to these library subfolders. The **AeroSim** library contains a total of 103 blocks. Almost all of them are implemented using basic Simulink blocks,

with the exception of a few such as the WMM-2000 Earth magnetic model, and the pilot interface blocks which use operating system calls unavailable in Simulink - these are implemented using C/C++ as C-MEX S-functions. The source code for these S-function is provided with the **AeroSim** library.

This portion of AeroSim appears to disclose that a block library provides 103 blocks that can be used in the development of aircraft dynamic models. AeroSim discloses that the block library includes non-linear equations of motion, linear aerodynamics, piston engine propulsion, aircraft inertia parameters, atmosphere models, Earth models, sensors and actuators, frame transformations, and pilot interfaces. (See, AeroSim, Figure 1 and 2).

In comparison, the method of claims 1 and 13 models a target system that includes a component as a portion of the target system. A target system is a dynamic system that is modeled in a computing device. The computer-based modeling is useful in the design of the target system because the model of the target system can be executed in the computing device to enable engineers, analysts, and researchers to determine the behavior of the target system without the physical implementation of the target system. In claims 1 and 13, an icon may be provided in the model of the target system to represent the component of the target system. When the icon is selected, a user interface may be presented to provide one or more component models that can be represented by the icon. If the user selects the first component model provided in the user interface, the icon becomes associated with and represents the first component model in the model of the target system.

AeroSim, however, does not disclose a user interface providing one or more component models so that a user can select one of the component models to incorporate in the model of the target system. AeroSim does not disclose "selecting a first component model provided in the user interface so that the icon becomes associated with and represents the first component model, wherein the first component model is incorporated into the model of the target system through the icon," as required by claim 1. AeroSim also does not disclose "selecting a first component model provided in the user interface so that the icon becomes associated with and represents the first component model after a sequence of modifications to the model, wherein the component model is incorporated into the model of the target system through the icon," as recited in claim

13. AeroSim does not disclose a user interface or block dialog that provides an option to a user of selecting one or more component models that the user wants to incorporate in the model through the icon.

AeroSim displays a user interface in Figure 28. The corresponding discussion of Figure 28 at page 32 recites:

Next we double-click the block to open the block parameters dialog. Here we will specify the aircraft parameter file, **myairplane.mat**, the initial conditions (position, velocity, attitude, angular rates, fuel, engine speed), the ground altitude with respect to the sea-level, and the simulation sample time.

The block parameter dialog disclosed in AeroSim enables a user to specify parameters of the block. In the block parameter dialog, the user specifies the aircraft parameter file, the initial conditions (position, velocity, attitude, angular rates, fuel, engine speed), the ground altitude with respect to the sea-level, and the simulation sample time. The selection of the block and subsequent display of a block parameter dialog discussed in AeroSim is not the equivalent of the selection of a component model provided in a user interface that is recited in Applicant's claims.

In view of the above arguments, Applicant respectfully requests withdrawal of the rejection of claims 1 and 13.

#### **B. Dependent Claims 2 and 4-12**

Claims 2 and 4-12 depend on base claim 1 and, as such, incorporate all of the features of claim 1 and are patentable for at least the same reasons as above. Applicant respectfully requests withdrawal of the rejection of claims 2 and 4-12.

As an additional reason for allowance, Applicant respectfully submits that AeroSim fails to disclose "switching the first icon to represent a second component model by selecting the second component model in the user interface," as recited in claim 2.

The Examiner asserts that AeroSim discloses this feature at page 3, column 2, last paragraph, line 1-3. Applicant respectfully disagrees.



The cited section states:

The **AeroSim** library folders, presented in Fig. 2, provide more than one-hundred blocks commonly used in the development of aircraft dynamic models. These include nonlinear equations of motion, linear aerodynamics, piston-engine propulsion, aircraft inertia parameters, atmosphere models, Earth models, sensors and actuators, frame transformations, and pilot interfaces such as joystick input and 3-D visual output.

The cited section discusses a block library that includes 103 blocks that can be used in the design of aircraft dynamic models. However, AeroSim clearly does not disclose the limitation of “switching the first icon to represent a second component model by selecting the second component model in the user interface,” as recited in claim 2. As noted above, AeroSim fails to disclose the selection of a component model in a user interface and so therefore clearly also does not disclose the switching of the first icon to represent the second component model.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejection of claims 2 and 4-12.

#### **C. Dependent Claims 14 and 16-24**

Claims 14 and 16-24 depend on base claim 13 and, as such, incorporate all of the features of claim 13. Applicant respectfully requests withdrawal of the rejection of claims 14 and 16-24.

Furthermore, Applicant respectfully submits as an additional reason for allowance that AeroSim fails to disclose “switching the first icon to represent a second component model by selecting the second component model in the user interface,” as recited in claim 14. The arguments submitted above with respect to claim 2 are also applicable to claim 14.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejection of claims 14 and 16-24.

**D. Claim 38**

Applicant respectfully submits that AeroSim fails to disclose at least the following limitation of claim 38: “the model storage provides a plurality of wind turbulence models including at least a discrete wind turbulence model.”

The Examiner refers to AeroSim, page 65 as disclosing this feature. At page 65, AeroSim appears to disclose a turbulence block that provides a von Karman turbulence model. (See, Figure 47). The turbulence block includes the outputs named ‘TurbVel’ and ‘TurbAcc.’ ‘TurbVel’ is “the  $3 \times 1$  vector of turbulence velocities, in body axes, in [m/s]” and ‘TurbAcc’ is “the  $3 \times 1$  vector of turbulence accelerations, in body axes, in [m/s].” AeroSim appears to disclose that “The block is applying von Karman turbulence shaping filters for longitudinal, lateral and vertical components to 3 white-noise sources.”

In comparison, the model storage of claim 38 provides a plurality of wind turbulence models including at least a discrete wind turbulence model. The discrete wind turbulence model gives the wind turbulence a discrete velocity spectrum. The turbulence block disclosed in AeroSim appears to output continuous turbulence velocities. AeroSim does not disclose a discrete wind turbulence model, and, consequently, does not teach or suggest providing a plurality of wind turbulence models including at least a discrete wind turbulence model.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejection of claim 38 under 35 U.S.C. §102(b).

**E. Claims 39-41 and 54-59**

Claims 39-41 and 54-59 depend on base claim 38 and, as such, incorporate all of the features of claim 38, and are patentable for at least the same reasons as above. Applicant respectfully requests withdrawal of the rejection of claims 39-41 and 54-59.

**F. Claim 60**

Applicant respectfully submits that AeroSim fails to disclose at least the feature of claim 60: “the model storage provides a plurality of models for equations of motion, wherein the plurality of models for equations of motion include at least one model for equations of motion

with simple variable mass and at least one model for equations of motion with custom variable mass.”

The Examiner points to AeroSim, page 3, column 2, last paragraph, lines 3-5 as disclosing this feature. (See office action, page 11). The portion of AeroSim noted by the Examiner discloses “These include nonlinear equations of motion, linear aerodynamics, piston-engine propulsion, aircraft inertia parameters, atmosphere models, Earth models, sensors ....” At page 89, AeroSim discloses that “There are two formulations for the equations of motion that are commonly used, and they are provided in two separate sub-folders within the AeroSim library. These are: the EOM with velocities in body axes (XYZ), and the EOM with aircraft velocities in geodetic frame (NED).”

AeroSim, however, does not disclose a model for equations of motion with simple variable mass and a model for equations of motion with custom variable mass. In simple variable mass, mass changes via mass rate, and in custom variable mass, a user specifies how the mass changes and other parameters that are closely dependent on the mass change. AeroSim does not disclose that the equations of motion (EOM) has simple variable mass or custom variable mass.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejection of claim 60 under 35 U.S.C. §102(b).

#### **G. Claims 61-72**

Claims 61-72 depend on base claim 60 and, as such, incorporate all of the features of claim 60 and are patentable for at least the same reasons as above. Applicant respectfully requests withdrawal of the rejection of claims 61-72.

#### **H. Claim 80**

Applicant respectfully submits that AeroSim fails to disclose the feature of claim 80: “the wind turbulence model includes at least one discrete wind turbulence model.”

The Examiner refers to AeroSim, page 65 as disclosing this feature. At page 65, AeroSim appears to disclose a turbulence block that provides a von Karman turbulence model. (See, Figure 47). The turbulence block includes the outputs named 'TurbVel' and 'TurbAcc.' 'TurbVel' is "the 3×1 vector of turbulence velocities, in body axes, in [m/s]" and 'TurbAcc' is "the 3×1 vector of turbulence accelerations, in body axes, in [m/s]." AeroSim discloses that "The block is applying von Karman turbulence shaping filters for longitudinal, lateral and vertical components to 3 white-noise sources."

In comparison, claim 80 recites that "the wind turbulence model includes at least one discrete wind turbulence model." The discrete wind turbulence model gives the wind turbulence a discrete velocity spectrum. The turbulence block disclosed in AeroSim appears to output continuous turbulence velocities. AeroSim does not disclose a discrete wind turbulence model.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejection of claim 80 under 35 U.S.C. §102(b).

#### **I. Claims 81-86**

Claims 81-86 depend on base claim 80 and, as such, incorporate all of the features of claim 80 and are patentable for at least the same reasons as above. Applicant respectfully requests withdrawal of the rejection of claims 81-86.

#### **J. Claim 87**

Applicant respectfully submits that AeroSim fails to disclose the feature of claim 87: "the equations of motion models include at least one of simple variable mass models and custom variable mass models."

The Examiner points to AeroSim, page 3, column 2, last paragraph, lines 3-5 as disclosing this feature. The portion of AeroSim noted by the Examiner discloses "These include nonlinear equations of motion, linear aerodynamics, piston-engine propulsion, aircraft inertia parameters, atmosphere models, Earth models, sensors and ...." At page 89, AeroSim discloses that "There are two formulations for the equations of motion that are commonly used, and they

are provided in two separate sub-folders within the AeroSim library. These are: the EOM with velocities in body axes (XYZ), and the EOM with aircraft velocities in geodetic frame (NED).”

AeroSim, however, does not disclose a model for equations of motion with simple variable mass or a model for equations of motion with custom variable mass. In simple variable mass, mass changes via mass rate, and in custom variable mass, a user specifies how the mass changes and other parameters that are closely dependent on the mass change. AeroSim does not disclose that the equations of motion (EOM) has simple variable mass or custom variable mass.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejection of claim 87 under 35 U.S.C. §102(b).

#### **K. Claims 88-96**

Claims 88-96 depend on base claim 87 and, as such, incorporate all of the features of claim 87, and are patentable for at least the same reasons as above. Applicant respectfully requests withdrawal of the rejection of claims 88-96.

#### **VIII. Claim Rejections under 35 U.S.C. §103**

Claims 3, 15, 25-37, 42-53 and 73-79 are rejected under 35 U.S.C. §103(a) as being unpatentable over AeroSim Blockset User’s Guide (“AeroSim”) in view of Marc Rauw, FDC 1.2 - A SIMULINK Toolbox for Flight Dynamics and Control Analysis (“Rauw”). (See office action, page 16). Applicant respectfully traverses the rejection.

The rejections will be discussed below in the order of independent claims 1, 13, 25, 38 and 73 and their dependent claims.

#### **A. Claims 3 and 15**

Claims 3 and 15 depend on base claims 1 and 13 and as such, incorporate all of the features of claims 1 and 13, respectively. The Examiner cites Rauw to provide teachings for the features added in dependent claims 3 and 15.

Rauw provides “an overview of the Flight Dynamics and Control toolbox FDC 1.2, a graphical software environment for the design and analysis of aircraft dynamics and control systems, based upon Matlab and Simulink.” (See Rauw, page iii). Rauw, however, does not teach the feature of “selecting a first component model provided in the user interface so that the icon represents the first component model, wherein the first component model is incorporated into the model of the target system through the icon,” as recited in claim 1. Rauw does not teach the feature of “selecting a first component model provided in the user interface so that the icon represents the first component model after a sequence of modifications to the model, wherein the component model is incorporated into the model of the target system through the icon,” as recited in claim 13.

Furthermore, Applicant submits that Rauw does not teach the feature that “the component models belong to a category of atmosphere models that include at least a non standard day atmosphere model,” as recited in claims 3 and 15.

In the Office Action, the Examiner alleges that the equations provided in page 25 of Rauw teach a non standard day atmosphere model. (See the office action page 17).

Rauw specifically teaches that the equations provided in page 25 of Rauw teach the International Civil Aviation Organization (ICAO) Standard Atmosphere model. (See Rauw, page 24). Rauw uses a standard atmosphere model and not a non standard atmosphere model.

The Examiner refers to the present application, page 13, lines 10-13 and interprets a non standard atmosphere model as a model in which the geometrical altitude is replaced with the geopotential altitude in the equation described at page 25 of Rauw. (See office action page, page 17). The present application describes at page 13 that:

the Non-Standard Day 310 atmosphere model 223 and Non-Standard Day 210C atmosphere model 224 implement the data set forth in military standards MIL-HDBK-310 and MIL-STD-210C, respectively, for absolute temperature, pressure, density, and speed of sound for the input geopotential altitude. ... The standards MIL-HDBK-310 and MIL-STD-210C also provide consistent vertical profiles of temperature and density up to 80 km based on

extremes at 5, 10, 20, 30 and 40 km. ... The military standards MIL-HDBK-310 and MIL-STD-210C are illustrative standards for the embodiment of non-standard day atmosphere models. One of skill in the art will appreciate that the non-standard day atmosphere models are not limited to the military standards MIL-HDBK-310 and MIL-STD-210C, and rather includes any specification describing an atmosphere other than the standard atmosphere.

The non standard day atmosphere model may be a model that implements specifications describing an atmosphere other than the standard atmosphere, such as an atmosphere including extremes at 5, 10, 20, 30 and 40 km, as described in the present application. Rauw does not teach an atmosphere model that represents specifications describing an atmosphere other than the standard atmosphere, such as an atmosphere including extremes. Replacing the geometrical altitude with the geopotential altitude in the equations described at page 25 of Rauw does not produce a non standard day atmosphere model.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejections of claims 3 and 15 under 35 U.S.C. §103(a).

#### **B. Claim 25**

Applicant respectfully submits that AeroSim fails to disclose the feature of claim 25: “the model storage includes at least one non-standard day atmosphere model.”

In the Office Action, the Examiner alleges that the equations provided in page 25 of Rauw teach a non standard day atmosphere model. (See the office action page 18).

Rauw specifically teaches that the equations provided in page 25 represents the International Civil Aviation Organization (ICAO) Standard Atmosphere model. (See Rauw, page 24). Rauw uses a standard atmosphere model and not a non standard atmosphere model.

The Examiner refers to the present application, page 13, lines 10-13 and interprets a non standard atmosphere model as a model in which the geometrical altitude is replaced with the geopotential altitude in the equation at page 25 of Rauw. (See the office action page 18). The

present application describes that the non standard day atmosphere model may be a model that implements specifications of an atmosphere other than the standard atmosphere, such as an atmosphere including extremes at 5, 10, 20, 30 and 40 km. (See the present application, page 13). Rauw does not teach an atmosphere model that represents an atmosphere including extremes. Replacing the geometrical altitude with the geopotential altitude in the equations at page 25 of Rauw does not produce a non standard day atmosphere model.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejection of claim 25 under 35 U.S.C. §103(a).

### **C. Claims 26-37**

Claims 26-37 depend on base claim 25 and as such, incorporate all of the features of claim 25. Claims 26-37 are not rendered obvious over the cited references.

Furthermore, Applicant submits that the cited references fail to teach that “the non-standard day atmosphere model includes a model incorporating a non-standard day atmosphere from one of military standard specifications MIL-HDBK-310 and MIL-STD-210C,” as recited in claim 29.

The Examiner alleges that “the implementation disclosed in (page 24, last paragraph to page 25, last paragraph, line 2) is functionally equivalent to the results is produced by the implementation expressly claimed in Applicant’s claim 29.” (See office action, page 19). Applicant respectfully disagree.

Rauw specifically teaches that the equations provided in page 25 represents the International Civil Aviation Organization (ICAO) Standard Atmosphere model. (See Rauw, page 24). In contrast, claim 29 recites that “the non-standard day atmosphere model includes a model incorporating a non-standard day atmosphere from one of military standard specifications MIL-HDBK-310 and MIL-STD-210C.” The military standard specifications MIL-HDBK-310 and MIL-STD-210C specify data that is different than the specification defined in the ICAO Standard. Applicant therefore submits that the military standard specifications MIL-HDBK-310



and MIL-STD-210C recited in claim 29 produce different results than the ICAO Standard taught in Rauw.

Applicant therefore requests withdrawal of the rejection of claims 26-37 under 35 U.S.C. §103(a).

#### **D. Claims 42-53**

Claims 42-53 depend on base claim 38 and as such, incorporate all of the features of claim 38. The Examiner cites Rauw to provide teachings for the features added in claims 42-53.

Rauw provides “an overview of the Flight Dynamics and Control toolbox FDC 1.2, a graphical software environment for the design and analysis of aircraft dynamics and control systems, based upon Matlab and Simulink.” (See Rauw, page iii). Rauw, however, does not teach the feature that “the model storage provides a plurality of wind turbulence models including at least a discrete wind turbulence model,” as recited in claim 38.

Claims 42-53 are not be rendered obvious over the cited references. As such, Applicant therefore requests withdrawal of the rejection of claims 42-53 under 35 U.S.C. §103(a).

#### **E. Claim 73**

Applicant respectfully submits that AeroSim fails to disclose the feature of claim 73: “the atmosphere models includes non-standard day atmospheric models.”

In the Office Action, the Examiner alleges that the equations provided in page 25 of Rauw teach a non standard day atmosphere model. (See the office action page 24).

Rauw specifically teaches that the equations provided in page 25 represents the International Civil Aviation Organization (ICAO) Standard Atmosphere model. (See Rauw, page 24). Rauw uses a standard atmosphere model and not a non standard atmosphere model.

The Examiner refers to the present application, page 13, lines 10-13 and interprets a non standard atmosphere model as a model in which the geometrical altitude is replaced with the

geopotential altitude in the equation described at page 25 of Rauw. (See office action, page 24). In the present application, the non standard day atmosphere model may be a model that implements specifications describing an atmosphere other than the standard atmosphere, such as an atmosphere including extremes at 5, 10, 20, 30 and 40 km. (See the present application, page 13). Rauw does not teach an atmosphere model that represents an atmosphere including extremes. Replacing the geometrical altitude with the geopotential altitude in the equations described at page 25 of Rauw does not produce a non standard day atmosphere model.

In light of the aforementioned arguments, Applicant respectfully requests withdrawal of the rejection of claim 73 under 35 U.S.C. §103(a).

#### **F. Claims 74-79**

Claims 74-79 depend on base claim 73 and as such, incorporate all of the features of claim 73. Accordingly, claims 74-79 are not rendered obvious over the cited references.

Furthermore, Applicant submits that the cited references fails to teach that “the graphical user interface provides an option to change an atmosphere model to another atmosphere model,” as recited in claim 78.

The Examiner asserts that AeroSim discloses this feature at page 41, 2<sup>nd</sup> paragraph. (See office action, page 25).

At page 41, 2<sup>nd</sup> paragraph, AeroSim appears to disclose that the block library contains a total of 103 blocks. AeroSim, however, does not disclose a user interface that provides an option to change an atmosphere model to another atmosphere model.

Applicant therefore requests withdrawal of the rejection of claims 74-79 under 35 U.S.C. §103(a).

#### **IX. Conclusion**

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-031. In the event that a petition for an extension of time is

required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

In view of the above comments, Applicant believes that the pending application is in condition for allowance and urges the Examiner to pass the claims to allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicant's attorney at (617) 227-7400.

Dated: April 9, 2007

Respectfully submitted,

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